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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/352,562	07/13/1999	JAMES WATT	1400.4100221	2431

24228 7590 04/01/2003

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EXAMINER

EMDADI, KAMRAN

ART UNIT	PAPER NUMBER
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2664

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DATE MAILED: 04/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/352,562

Applicant(s)

WATT ET AL.

Examiner

Kamran Emdadi

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims: 1-25 have been considered but are moot in view of the new ground(s) of rejection.
 - Regarding claim 1, the applicant points out that the Pitcher reference does not teach a plurality of forwarding engines, the examiner does not deny that the term forwarding engine is in a singular form as contained in the Pitcher reference, however, the term forwarding engine is cited from the applicant's specification as follows:

"routers include one or more route computation engines and one or more forwarding engines." (Page 2)

Given this description of a forwarding engine the examiner can find no distinguishing embodiment within this invention that would make a plurality of forwarding engines a patentable and unique difference over the prior art, a new obviousness type rejection is in order for the independent claims and the subsequent claims of this invention.
 - With respect to the control information sent by a packet means, the examiner agrees that no packet is said to be sent containing control information and the terminology has been composed to better suite the claim language.
 - Regarding claims 2-5, the example cited by Pitcher as prior art sets a first format for multicasting and data forwarding to a plurality of forwarding engines, Pitcher further discloses (Col 3, lines 10-20) a new and improved method to build upon

the shortcomings of extra processing (Col 3, lines 5-8), the embodiment is thus an improvement over the prior art made to record and is valid in the claim citing previously made and thus the same citation now a 103 type rejection citation stands as rejected.

- Regarding claim 6, the explanation has been modified for the applicant's needed clarification.
- Regarding claims 7 and 9, in view of the new found rejection for claim 1, claims 7 and 9 follow from the same concern raised by the applicant for claim 1.
- Regarding claims 10 and 11 a new combinational 103 rejection is in order.
- Regarding claims 13-17, 19-22, 24 and 25, a new rejection has been made.
- Regarding claims 8 and 23, the argument made by the applicant that the protocol mentioned by the Batz reference (ALPS protocol) limits the reference to an airline used protocol as the reference mentions in the specification. The examiner agrees that the ALPS protocol is used by the airline systems as an application specific protocol; however, this by no means limits the scope of this invention to this routing protocol, (Figure 5) of the Batz reference specifically points out the TCP/IP cloud 520 as a portion of the data exchange process and thus this ALPS protocol must be put into IP packets same as the protocol mentioned by the primary reference Pitcher and the secondary reference Steeves, thus the argument set forth by the applicant is not persuasive and the rejection stands under the same logical explanation given below.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims: 1-7, 9-22, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pitcher (US Patent No. 6370142) in view of Steeves et al. (US Patent No. 6212185).

- Regarding claim 1, 12 and 18 Pitcher teaches: forwarding multicast packets by a forwarding engine, where the forwarding engine evaluates the destination address to forward the data packets based on information found in the packets (Col 9, lines 16-21), control information is found in the Dtag (Destination) table 1000 to be: 1014, 1016, 1018 and 1020 (Figure 10) used by the forwarding portions of the data flow control (Col 14, lines 1-10), and memory 908 contained in a MCP 320 (Master Control Process) operatively connected to a controlling device 906 and where the MCP 320 obtains registration information, and identifies the routing of the data (Col 13, lines 39-47) but fails to teach of a plurality of forwarding engines used in the communication scheme of a router communication network. Steeves teaches: a network of routing nodes (Figure 3) with one of routing nodes containing a plurality of forwarding engines (Figure 4), where the routing node contains a route calculation portion and control information is exchanged (Abstract) and

(Figure 4), where routing maintenance and is made and to the routing node data processor (Figure 6). Therefore it would have been obvious to one skilled in the art at the time the invention was made to have combined a plurality of forwarding engines to a network of routing devices for a increased level of interoperability amongst routing devices said to contain one or more forwarding engines and further stated in the specification of the applicant for routers to have one or more forwarding engines is an optional configuration for a router.

- Regarding claims 2-5, Pitcher discloses: all members of a group providing identification information (Abstract), where there is interfacing to forwarding engines (Col 2, lines 38-43), the switch can update information in its report destination list (Col 7, lines 15-20), and a query as to whether or not a router is present (Col 7, lines 23-26).
- Regarding claim 6, Pitcher teaches: a forwarding engine can use a forwarding table to determine routing information and control information where the forwarding table at step 645 a packet is forwarded by way of a destination list and or corresponding Dtag (control information related tag is stated above) (Col 9, lines 52-63).
- Regarding claims 7 and 9, Pitcher teaches: control information used for packet transfer (Col 18, lines 4-9) and control information regarding individual packet configuration (Col 14, lines 37-41) and : forwarding multicast packets by a forwarding engine, where the forwarding engine

evaluates the destination address to forward the data packets based on information found in the packets (Col 9, lines 16-21), control information is found in the Dtag (Destination) table 1000 to be: 1014, 1016, 1018 and 1020 (Figure 10) used by the forwarding portions of the data flow control (Col 14, lines 1-10), and memory 908 contained in a MCP 320 (Master Control Process) operatively connected to a controlling device 906 and where the MCP 320 obtains registration information, and identifies the routing of the data (Col 13, lines 39-47).

- Regarding claims 10 and 11, Pitcher teaches the flow of data from forwarding engines (Col 13, lines 40-44) and the forwarding of multicast packets by a forwarding engine, where the forwarding engine evaluates the destination address to forward the data packets based on information found in the packets (Col 9, lines 16-21), control information is found in the Dtag (Destination) table 1000 to be: 1014, 1016, 1018 and 1020 (Figure 10) used by the forwarding portions of the data flow control (Col 14, lines 1-10), and memory 908 contained in a MCP 320 (Master Control Process) operatively connected to a controlling device 906 and where the MCP 320 obtains registration information, and identifies the routing of the data (Col 13, lines 39-47) but fails to teach of a plurality of forwarding engines used in the communication scheme of a router communication network where there is a shared traffic flow and varying levels of service. Steeves teaches: a network of routing nodes (Figure 3) with one of routing nodes containing a plurality of

forwarding engines (Figure 4), where the routing node contains a route calculation portion and control information is exchanged (Abstract) and (Figure 4), where a field for type of service is present in the data packet (Figure 2) to designate the quality of service needed for that individual packet and for whatever respective forwarding engine the packet was to travel through, and a shared traffic flow configuration (Figure 3). Therefore it would have been obvious to one skilled in the art at the time the invention was made to have combined a plurality of forwarding engines to a network of routing devices with a varying service level and shared traffic flow for a increased level of interoperability amongst routing devices and varying data packet service levels for increased flexibility of data types and network data flow configurations.

- Regarding claims 13-17, 19-22, 24 and 25, Pitcher teaches: all of the above embodiments except a route computation engine capable of requesting status, and the forwarding engines knowing the state of each interface. Steeves teaches: a network of routing nodes (Figure 3) with one of routing nodes containing a plurality of forwarding engines (Figure 4), where a field for type of service is present in the data packet (Figure 2) to designate the quality of service needed for that individual packet and for whatever respective forwarding engine the packet was to travel through, and a shared traffic flow configuration (Figure 3) where the routing node contains a route calculation portion and control information is exchanged (Abstract) and (Figure 4), where

routing maintenance and is made and to the routing node data processor and the route computation engine is responsible for the state of all the forwarding engines within their combined traffic flow and status responses as shown by the data flow diagram of (Figure 6). Therefore it would have been obvious to one skilled in the art at the time the invention was made to have combined a plurality of forwarding engines to a network of routing devices for a increased level of interoperability amongst routing devices and to have a central computation engine to handle the forwarding engines status and request information from the engines for updated data exchange capabilities to maintain the demand for high levels of expedited data service levels.

4. Claims 8 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pitcher (US Patent No. 6370142) in view of Steeves et al. (US Patent No. 6212185) and further in view of Batz (US Patent No. 5918022).
 - Regarding claims 8 and 23, Pitcher teaches of a packet data being forwarded to different forwarding engines and routers but fails to teach of a tunneling data type, Batz teaches of a network where protocols are tunneling data between routers (Col 6, lines 42-45) to ensure reliable identification of the packets being sent. Therefore it would have been obvious to one skilled in the art at the time the invention was made to have included tunneling as a process used in packet transfer to ensure more reliable data packet identification for routers.

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5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kamran Emdadi whose telephone number is (703) 305-4899. The examiner can normally be reached between the hours of 8am and 5pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin, can be reached at (703) 305-4366. The fax phone numbers for the organization where this application or proceeding is assigned is (703) 872-9314 for regular communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Kamran Emdadi

03/18/2003

KWANG BIN YAO
PRIMARY EXAMINER

